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ABSTRACT

To determine the number and current use of microcomputers in Alberta's elementary, junior, and senior high schools, a total of 1,509 schools were surveyed. The results, as reported by 1,271 schools (84.2%), showed the total number of microcomputers to be 13,748. To provide more in-depth information, schools were categorized by six instructional levels and survey results were tabulated both by school level and by microcomputer brand category. Data indicate Apple computers dominate at the elementary and junior high level; however, this dominance seems to weaken at the senior high level. Another aspect of the survey sought to determine how many microcomputers schools would buy in the next fiscal year; results of this projection showed that the 1,271 respondents expected to purchase an additional 6,859 microcomputers during this period. It was concluded that the computer literacy program is strong at the elementary and junior high school levels, while courses in computer processing seem to be more popular at the senior high level. One of the biggest obstacles to the implementation of instructional computing is identified as the lack of teachers who are computer literate; it is recommended that both pre- and in-service teacher education include computer literacy courses. Appendices include a sample survey package and a list of participating school jurisdictions. In addition, 30 data tables present findings on computer literacy, computer use, computer location in schools, and teacher attitudes toward MECC (Minnesota Educational Computer Consortium) software. These tables provide information for elementary, junior, and senior high schools as well as total results for all schools surveyed. (JB)

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MICROCOMPUTERS IN ALBERTA SCHOOLS - 1985

a final report
on the results of a resource survey of

ALBERTA SCHOOLS

conducted by

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on behalf of

Alberta Education
Media and Technology Branch

June 1985

TABLE OF CONTENTS

I. INTRODUCTION 1

II. DESIGN OF THE SURVEY 3

A. Population 3

B. The Survey Instrument 3

III. FINDINGS - ALL SCHOOLS 5

A. Description of the Population 5

B. Number of Microcomputers in Alberta Schools 8

C. Administrative Uses of Microcomputers in Schools 16

D. Computer Assisted Instruction in Schools 18

E. Teacher In-service 18

F. MECC Software/Courseware 19

IV. FINDINGS - ELEMENTARY SCHOOLS 23

A. Microcomputers in Elementary Schools 23

B. Elementary Computer Literacy 28

V. FINDINGS - JUNIOR HIGH SCHOOLS 32

A. Microcomputers in Junior High Schools 32

B. Junior High School Computer Literacy 37

VI. FINDINGS - SENIOR HIGH SCHOOLS 39

A. Microcomputers in Senior High Schools 39

B. Senior High School Computer Literacy 44

VII. SUMMARY AND CONCLUSIONS 47

APPENDIX A (SAMPLE SURVEY PACKAGE) 51

APPENDIX B (LIST OF PARTICIPATING SCHOOL JURISDICTIONS) 62

LIST OF TABLES

1. SCHOOLS PARTICIPATING IN SURVEY (BY CATEGORY) 7

2. NUMBER OF MICROCOMPUTERS REPORTED IN ALBERTA SCHOOLS - JANUARY 1985 8

3. NUMBER OF ADDITIONAL MICROCOMPUTERS PLANNED FOR NEXT FISCAL YEAR 10

4. NUMBER OF MICROCOMPUTERS IN ALBERTA SCHOOLS BY BRAND CATEGORY - MARCH 1983 11

5. MICROCOMPUTERS IN ALBERTA SCHOOLS 1981-1985 WITH A PROJECTION TO 1986 13

6. LOCATION OF MICROCOMPUTERS IN THE SCHOOLS 15

7. USE OF MICROCOMPUTERS FOR ADMINISTRATIVE TASKS 17

8. EXTENT OF USE OF MECC DISKS IN ALBERTA SCHOOLS 20

9. ACCESS TO MECC DISKS VIA RESOURCE CENTRES 21

10. QUALITY RATING OF MECC DISKS 22

11. NUMBER OF MICROCOMPUTERS IN ALBERTA ELEMENTARY SCHOOLS 23

12. LOCATION OF MICROCOMPUTERS IN ELEMENTARY SCHOOLS 25

13. EXTENT OF USE OF MECC DISKS IN ALBERTA ELEMENTARY SCHOOLS 26

14. ELEMENTARY SCHOOL ACCESS TO MECC DISKS VIA RESOURCE CENTRES 27

15. QUALITY RATING OF MECC DISKS AS RATED BY ALBERTA ELEMENTARY SCHOOLS 28

16. GRADE LEVELS AT WHICH COMPUTER LITERACY IS FIRST INTRODUCED IN ALBERTA ELEMENTARY SCHOOLS 30

17. FACTORS LIMITING THE INTRODUCTION OF ELEMENTARY COMPUTER LITERACY IN ALBERTA SCHOOLS 31

18. NUMBER OF MICROCOMPUTERS IN ALBERTA JUNIOR HIGH SCHOOLS 32

19. LOCATION OF MICROCOMPUTERS IN JUNIOR HIGH SCHOOLS 34

20. EXTENT OF USE OF MECC DISKS IN ALBERTA JUNIOR HIGH SCHOOLS 35

21. JUNIOR HIGH SCHOOL ACCESS TO MECC DISKS VIA RESOURCE CENTRES 36

22. QUALITY RATING OF MECC DISKS AS RATED BY ALBERTA JUNIOR HIGH SCHOOLS 37

23. NUMBER OF MICROCOMPUTERS IN ALBERTA SENIOR HIGH SCHOOLS 39

24. LOCATION OF MICROCOMPUTERS IN SENIOR HIGH SCHOOLS 41

25. EXTENT OF USE OF MECC DISKS IN ALBERTA SENIOR HIGH SCHOOLS 42

26. SENIOR HIGH SCHOOL ACCESS TO MECC DISKS VIA RESOURCE CENTRES 43

27. QUALITY RATING OF MECC DISKS AS RATED BY ALBERTA SENIOR HIGH SCHOOLS 44

28. ADEQUACY OF PRESENTLY AVAILABLE SENIOR HIGH SCHOOL COURSES IN COMPUTING FOR MEETING STUDENT NEEDS 45

29. ADEQUACY OF THE QUANTITY OF MICROCOMPUTER HARDWARE FOR MEETING STUDENT NEEDS 46

30. MICROCOMPUTERS IN ALBERTA SCHOOLS SUMMARY - JANUARY 1985 48

LIST OF GRAPHS

1. SURVEY RESPONSE RATE - 1985 5

2. SCHOOLS PARTICIPATING IN SURVEY (BY CATEGORY) 7

3. NUMBER OF MICROCOMPUTERS REPORTED IN ALBERTA SCHOOLS - JANUARY 1985 9

4. MICROCOMPUTERS IN ALBERTA SCHOOLS 1981-1985 WITH A PROJECTION TO 1986 13

I. INTRODUCTION

Since 1981, when the Honourable David King, Minister of Education, announced the creation of the Computer Technology Project and the Ministerial Task Force on Computers in Schools, enormous strides have been made in the use of computers in Alberta schools. Partly as a result of recommendations of these early initiatives, the Minister announced on May 30, 1984 the availability of approximately $31.5 million in matching grants to school boards for the acquisition of computer hardware. Following this, instructional computing in schools has undergone such growth that it was felt necessary to ascertain where we are and where we are going. This survey endeavours to answer these questions.

A total of 1,509 Alberta schools were surveyed to determine the number of microcomputers in the schools. To date, 1,271 (84.23%) of the survey forms have been returned. This report is a summary of the responses received from these schools. In addition, where appropriate, these findings have been extrapolated to estimate what the number of microcomputers would likely have been if all 1,509 schools had returned their survey forms.

The results showed that the total number of microcomputers in Alberta schools as reported by the 1,271 respondents was 13,748. To estimate the actual number of microcomputers in all 1,509 Alberta schools, this result was linearly extrapolated. This projection suggested that the actual number of microcomputers in Alberta schools effective January 1, 1985 was 16,234.

Another aspect of the survey sought to determine how many microcomputers schools would likely buy in the next fiscal year. While some schools stated that they were only able to make a tentative projection because of uncertainty about budgets, the results of this projection showed that the 1,271 respondents expected to purchase an additional 6,859 microcomputers during the next fiscal year. Extrapolating this result to all 1,509 schools showed that the total number of microcomputers Alberta schools would purchase in the next fiscal year would likely be 8,143.

II. DESIGN OF THE SURVEY

A. Population

This survey was designed to gather and analyze information about instructional computing resources in Alberta schools. It was a mail survey which included all schools in the province that offered instruction from kindergarten (Early Childhood Services, or ECS) to twelfth grade. Excluded from the survey were all privately operated schools (including private ECS schools) and other institutions whose primary function was something other than schooling (e.g., schools operated in hospitals and correctional institutes).

A list of the names and addresses of all schools meeting these criteria was provided by Alberta Education. The total number of schools on this list was 1,509. This group of schools then became the population for this survey.

B. The Survey Instrument

Since 1981, there have been three other surveys conducted in Alberta to monitor the number of microcomputers in Alberta schools. The last of these was conducted in March of 1983 and the results of that survey were reported in *Computers in Schools, The Report of the Minister's Task Force on Computers in Education*, published in June 1983.

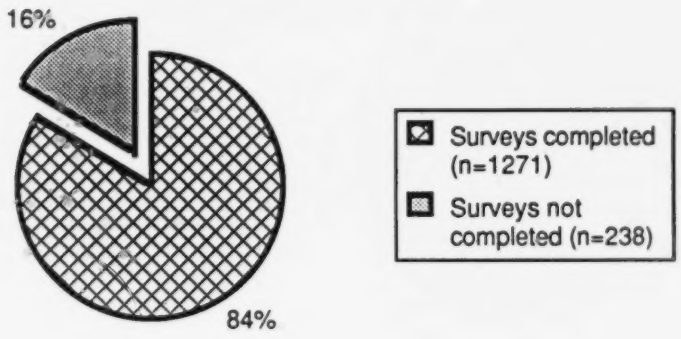
The results obtained from the 1983 survey were entered into a database (Dbase II) and were used to generate survey forms for this survey. Every school in the population received a survey form pre-printed with information as reported by that school in 1983. Each school was requested to review and update the information pre-printed on the survey form effective January 1, 1985. It was felt that this approach, in which respondents needed only to make corrections to pre-printed information, would reduce the time and effort required to complete the survey and would help to insure more accurate results. A sample of the survey form, along with other materials that were mailed to each of the schools as part of the survey package, are included in Appendix A.

A survey package was mailed to the principal of each school in February of 1985. By the end of March 1985, approximately 75% of the schools had returned their completed survey forms. A follow-up letter was sent to the remaining 25% and by May 1, 1985 a total of 1,271 of the 1,509 schools surveyed had returned their completed survey forms. This resulted in a response rate of 84.23% (see Graph 1). No further follow-up was attempted. The results presented in this report are therefore based on a summary of the responses received from 1,271 Alberta schools.

III. FINDINGS - ALL SCHOOLS

A. Description of the Population

Survey forms were mailed to a total of 1,509 Alberta schools. Of these, 1,271 schools returned completed survey forms, representing a response rate of just over 84%. Graph 1 depicts the survey response rate obtained in this study.



GRAPH 1

Survey Response Rate - 1985

The total enrolment in the 1,271 schools surveyed was 383,152 students. The total number of certificated teachers in these schools was 22,314. To categorize the schools accurately by instructional level, it was necessary to establish 6 categories. These included the following:

CATEGORY 1 - any school which includes students in the range of ECS to sixth grade (elementary)

CATEGORY 2 - any school which includes students in the range of seventh grade to ninth grade (junior high)

CATEGORY 3 - any school which includes students in the range of tenth grade to twelfth grade (senior high)

CATEGORY 4 - any school which includes students in the range of ECS to ninth grade (elementary-junior high)

CATEGORY 5 - any school which includes students in the range of seventh grade to twelfth grade (junior-senior high)

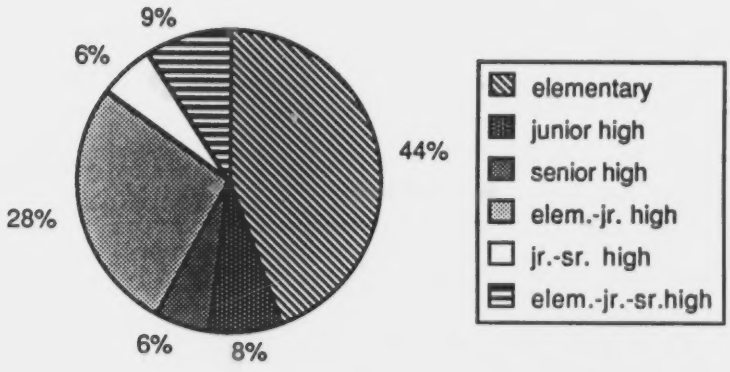
CATEGORY 6 - any school which includes students in the range of ECS to twelfth grade (elementary-junior-senior high)

The total number of schools in each of the categories identified above is summarized in Table 1. This table also shows the number and proportion of teachers and students attending schools in each of the categories.

CATEGORY	Number of Schools	Number of Teachers	Number of Students
1 (elem.)	564 (44.4%)	7,973	140,211
2 (jr. high)	100 (7.9%)	2,367	40,801
3 (sr. high)	72 (5.6%)	3,414	63,141
4 (elem.- jr.)	349 (27.5%)	4,675	77,351
5 (jr.- sr.)	73 (5.7%)	1,824	29,985
6 (elem.- jr.- sr.)	113 (8.9%)	2,061	31,663
TOTAL	**1271 (100%)**	**22,314**	**383,152**

TABLE 1

Schools Participating in Survey
(by Category)



GRAPH 2

Schools Participating in Survey
(by Category)

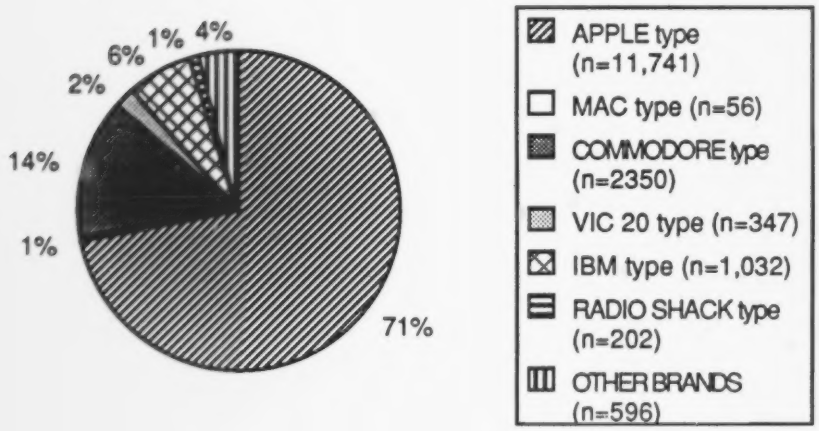
B. Number of Microcomputers in Alberta Schools

The total number of microcomputers reported by the 1,271 schools was 13,748. Extrapolating this total to 1,509 schools, it is estimated that the total number of microcomputers in Alberta schools effective January 1, 1985 was 16,324. In completing the survey form, schools were asked to indicate the number of computers located in the school in each of seven brand categories. The brand categories were selected because they identify the general level of computing power available and because they provide a clear indication of the kinds of software needed. Table 2 and Graph 3 show a detailed breakdown of the number of microcomputers in Alberta schools by brand category.

BRAND CATEGORY	NUMBER (1,271 sch.)	PROJECTION (1,509 sch.)	% OF MARKET
APPLE type	9,889	11,741	72.0%
MAC type	47	56	0.3%
COMMODORE type	1,979	2,350	14.4%
VIC 20 type	292	347	2.1%
IBM type	869	1,032	6.3%
RADIO SHACK type	170	202	1.2%
OTHER BRANDS	502	596	3.7%
TOTAL	**13,748**	**16,324**	**100.0%**

TABLE 2

Number of Microcomputers Reported
in Alberta Schools - January 1985



GRAPH 3

Number of Microcomputers Reported
in Alberta Schools - January 1985

One aspect of the survey asked schools to look ahead to the next fiscal year and to estimate the number of ADDITIONAL microcomputers they were planning to buy. While some schools added a precautionary note to their estimates, indicating that any projections they made would be subject to the availability of funds, the results of this aspect of the survey indicated that Alberta schools are planning to increase significantly the installed base of microcomputers during the coming fiscal year. The results of this aspect of the survey indicated that schools might increase the installed base by nearly 50% to more than 24,000 machines. Table 3 shows a detailed breakdown of the reported purchasing plans of schools for the next fiscal year.

BRAND CATEGORY	NUMBER (1,271 sch.)	PROJECTION (1,509 sch.)	% MARKET
APPLE type	4,742	5,630	69.1%
MAC type	47	56	0.7%
COMMODORE type	355	421	5.2%
VIC 20 type	44	52	0.6%
IBM type	1,470	1,745	21.4%
RADIO SHACK type	25	30	0.4%
OTHER BRANDS	176	209	2.6%
TOTAL	**6,859**	**8,143**	**100.0%**

TABLE 3

Number of Additional Microcomputers
Planned for Next Fiscal Year

One trend seems apparent. While the market share of the APPLE II family appears to be slipping slightly, it is still very strong. IBM's market share appears to be showing strong gains, while Commodore, Radio Shack and others seem to be losing their share of the market. For some time now, there has been speculation in the microcomputer industry that, ultimately, the microcomputer market would become a "two-horse" race (APPLE and IBM). That speculation certainly seems to be supported by the results of this survey.

Because surveys similar to this one have been conducted in Alberta on other occasions, it is interesting to compare these findings with those from previous

surveys. It is not possible to make precise comparisons of current data with the results from previous surveys because of revisions to the format for the survey instrument. Table 4 shows the number of microcomputers reported in Alberta schools in March 1983 as well as a projection of the estimated number of microcomputers schools were planning to purchase during the following (1984) fiscal year.

BRAND CATEGORY	NUMBER OF MICROCOMPUTERS	PROJECTED NEXT FISCAL YEAR
APPLE type	2,049 (58.0%)	1,068 (68.4%)
COMMODORE type	948 (26.8%)	274 (17.6%)
RADIO SHACK type	151 (4.3%)	41 (2.6%)
OTHER BRANDS	387 (10.9%)	178 (11.4%)
TOTAL	**3,535 (100.0%)**	**1,561 (100.0%)**

TABLE 4

Number of Microcomputers in Alberta
Schools By Brand Category - March 1983

It is possible to make several significant observations from the comparison between the 1983 results and those of the current study. First, it appears that the trend toward increased use of APPLE type microcomputers was clearly indicated by the 1983 findings (58% of the installed base consisted of APPLE type microcomputers). This data also suggested that the popularity of COMMODORE type microcomputers was decreasing (26.8% of the installed base in March 1983 dropping to 17.6% during the next fiscal year). Since IBM was not identified as a

distinct brand category in the 1983 survey, schools would have reported any plans to install IBM microcomputers as "OTHER BRANDS". It is possible that the increase in the number of "other brands" (from 10.9% in March 1983 to 11.4% during the next fiscal year) could have been the result of plans to buy IBM microcomputers.

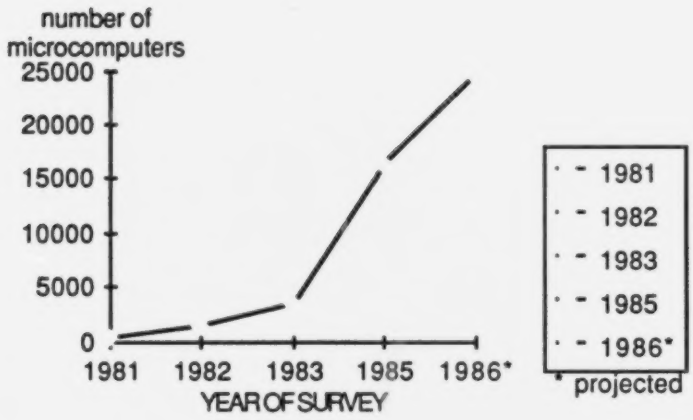
It appears that the projection made in March 1983 concerning the number of microcomputers planned for the next fiscal year may have been somewhat conservative. Projected figures based on the 1983 findings indicated that the total number of microcomputers in Alberta schools by the end of the 1984 fiscal year would likely be 5,096 (3,535 + 1,561). Yet this survey reported more than 16,000 microcomputers on January 1, 1985. The most likely reason for this is that schools had not anticipated imminent changes in government funding when their projections were made.

Table 5 presents a summary of the results of three previous surveys as reported in The Report of the Minister's Task Force on Computers in Education. Graph 4 is a representation of these results along with the results of this survey and the results of the projections for the next fiscal year. The most significant observation that can be made from this data is that the growth curve is still rising rapidly.

YEAR	NUMBER OF MICROCOMPUTERS
January 1981	256
April 1982	1,525
March 1983	3,535
January 1985	16,324
1986 (projected)	24,467

TABLE 5

Microcomputers in Alberta Schools
1981-1985 With a Projection to 1986



GRAPH 4

Microcomputers in Alberta Schools
1981-1985 With a Projection to 1986

The ratio of students to microcomputers in Alberta schools, based on the 1,271 schools that responded to the survey, was found to be 27.87 to 1. Should the schools be successful in expanding the installed base of microcomputers in Alberta schools during the next fiscal year as projected in this survey, that ratio would drop to 18.59 to 1.

Of the 1,271 schools that completed survey forms, 1,202 or 94.6% reported having one or more microcomputers in the school, while 69 schools (5.4%) had no microcomputers at all. The subset of respondents that reported having no microcomputers were analyzed and it was found that 44 of the 69 schools in this category (63.8%) were one-room schools with enrolments varying from 6 to 36 students. Furthermore, it was found that the total number of students attending these 69 schools was 3,539. This means that of 383,152 students attending the schools that participated in this survey, only 3,539 (0.9%) attend schools that do not have a microcomputer.

The next section of the survey sought to determine where microcomputers in Alberta schools were typically housed. Seven distinct areas of the school were identified and respondents were asked to indicate the number of microcomputers housed in each of the seven areas. An eighth category ("OTHER LOCATION") was added to provide for those cases that did not appear to be included in the other seven areas. While most respondents completed this portion of the survey, in some cases the total number of microcomputers accounted for in this portion of the survey did not agree with the number specified in a previous portion of the survey (in which respondents were asked to indicate the number of microcomputers located in the school by brand category). As a result, there is a small difference

(0.6%) between the totals reported in these two portions of the survey. The results of this portion of the survey are summarized in Table 6.

LOCATION	NUMBER OF SCHOOLS	NUMBER OF MICROCOMPUTERS
MICRO LAB.	516 (40.6%)	5,830 (42.4%)
RESOURCE ROOM	360 (28.3%)	878 (6.4%)
ADMIN. OFFICE	390 (30.7%)	468 (3.4%)
TEACHERS' CLASSROOM	435 (34.2%)	1,835 (13.4%)
MOVE AS NEEDED	496 (39.0%)	1,592 (11.6%)
INDUSTRIAL EDUC. LAB	79 (6.2%)	232 (1.7%)
BUSINESS EDUC.	128 (10.1%)	2,369 (17.2%)
OTHER LOCATION	155 (12.2%)	457 (3.3%)
UNACCOUNTED FOR		87 (0.6%)
TOTAL		**13,748(100%)**

TABLE 6

Location of Microcomputers in the Schools

The largest proportion of microcomputers (42.4%) seem to be located in microcomputer laboratories. From the data in Table 6, one can determine that the average microcomputer laboratory contains just over 11 microcomputers.

Some respondents reported difficulty with this portion of the survey because in many schools microcomputers are put to multiple use. For example, the microcomputer laboratory might be used on some occasions for teaching Business Education courses or, conversely, a Business Education laboratory might occasionally be used as a microcomputer laboratory.

While the lowest proportion of schools reported having microcomputers within Industrial Education and Business Education, this finding may be somewhat misleading because these subject areas are not taught in elementary schools. It is interesting to note, however, that even though only 10.1% of the schools reported having microcomputers in Business Education, 17.2% of the microcomputers in Alberta are located in Business Education. The average number of microcomputers per laboratory in Business Education is 18.5.

C. Administrative Uses of Microcomputers in Schools

Just over thirty percent of the schools reported having one or more microcomputers in the school administration office. In the next portion of the survey, respondents were asked to indicate the kinds of administrative uses to which microcomputers were being put. A summary of the results of this portion of the survey is presented in Table 7.

TYPE OF USE	NUMBER OF SCHOOLS
NOT USED FOR ADMINISTRATION	665 (44.7%)
ATTENDANCE RECORDING/REPORTING	115 (9.0%)
GRADE RECORDING/REPORTING	318 (25.0%)
PRINTING REPORT CARDS	106 (8.3%)
SCHEDULING CLASSES	55 (4.3%)
KEEPING SCHOOL FINANCIAL RECORDS	182 (14.3%)
WORD PROCESSING	440 (34.6%)
ELECTRONIC MAIL	38 (3.0%)
OTHER	204 (16.0%)

TABLE 7

Use of Microcomputers for Administrative Tasks

The administrative task for which most schools have begun using microcomputers is word processing. It is interesting that even though only 390 schools reported having a microcomputer in the administration office, 440 schools reported that they were using microcomputers for word processing. It would seem that there is a strong realization of the benefits of using word processing in administration to the extent that in some schools, even though there are no microcomputers specifically allocated to the administrative office, microcomputers allocated to other areas of the school are being used for administrative word processing tasks.

While electronic mail and messaging are relatively new developments, 3% of Alberta schools reported using microcomputers for these purposes.

D. Computer Assisted Instruction in Schools

The total number of schools in which some degree of computer assisted instruction (CAI) was being used was 1,020 (80.25%). The number of teachers that are using CAI in schools is 5,938 which is 26.6% of the teachers included in the results of this survey.

The number of schools that reported having teachers on staff who have written their own microcomputer programs was 601 (47.3%). Furthermore, the total number of teachers who have written microcomputer programs was 1,376 (6.2%). Because writing a microcomputer program demands a fairly high degree of proficiency, these findings are a good indication of the degree of "local expertise" that is available in Alberta schools.

E. Teacher In-Service

During the summer of 1983, ACCESS, the Alberta Educational Communications Authority in cooperation with the Department of Industrial and Vocational Education at the University of Alberta, conducted an experimental telecourse entitled The ACCESS Academy for Microcomputers. This telecourse was designed specifically for teachers and was broadcast by five television stations throughout Alberta as an experimental means of offering teacher in-service. Two hundred and ninety five of the schools responding (23.2%) reported having one or

more teachers on staff who had participated in The ACCESS Academy for Microcomputers. Each respondent was asked to indicate the number of teachers in the school who participated in The ACCESS Academy for Microcomputers. Respondents reported that a total of 593 teachers (2.7%) participated in this experimental telecourse.

Respondents were asked to indicate whether other staff in the school would be interested in participating in a future telecourse patterned after The ACCESS Academy for Microcomputers. A total of 862 schools (66.8%) indicated that at least one teacher in the school would be interested in such a telecourse if it were offered for university credit, while 722 schools (56.8%) indicated that at least one teacher in the school would be interested in such a telecourse even if it were offered with no university credit. The total number of teachers who indicated an interest in a future telecourse was 3,141 (14.1%) if it was offered for university credit and 2,337 (10.5%) if it was offered with no university credit. A number of the respondents, primarily from the larger urban schools, indicated that they had their own in-service program in place, organized and conducted by the central office and as a result, the teachers on the staff of these schools would not be interested in a telecourse.

F. MECC Software/Courseware

Several years ago, Alberta Education negotiated a provincial license for the acquisition and use of microcomputer programs produced by the Minnesota Educational Computing Consortium (MECC). Currently, the complete collection of MECC materials includes more than 120 floppy disks of microcomputer programs. ACCESS Alberta has installed a disk duplicating machine and is the provincial distributor of these disks. A section of this survey was designed to

determine the extent to which schools are using these materials and to determine respondents' opinions with regard to the quality of the MECC series. The extent to which schools have made use of MECC disks is summarized in Table 8.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	41	3.2%
none	302	23.8%
1 - 30	793	62.4%
31 - 60	103	8.1%
61 - 90	15	1.2%
91 - 120	4	0.3%
more than 120	13	1.0%

TABLE 8

Extent of Use of MECC Disks in Alberta Schools

Only a very small percentage of Alberta schools (1%) appear to be assembling a collection of ALL MECC disks. Instead, it seems that most schools (62.4%) seem to have acquired a collection of 30 disks or less. Perhaps most surprising is the finding that 23.8% of the schools do not have any of the MECC disks. It is important to point out that 5.4% of the schools do not have any microcomputers and, therefore, would not have any need for MECC disks. However, that means that 18.4% of Alberta schools that have microcomputers do

not have any of the MECC disks, even though Alberta Education has purchased a provincial license for these disks, thereby significantly lowering the cost.

In some school jurisdictions, resource materials are available from a centralized source within the jurisdiction. This survey also sought to determine the extent to which such centres were being used to loan MECC disks to schools. The results of this part of the survey are summarized in Table 9.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	584	45.9%
none	433	34.1%
1 - 30	81	6.4%
31 - 60	46	3.6%
61 - 90	29	2.3%
91 - 120	23	1.8%
more than 120	75	5.9%

TABLE 9

Access to MECC Disks Via Resource Centres

Respondents were asked to rate the overall quality of MECC disks. While many respondents indicated that it was difficult to assign an overall rating because

some programs were good, others were not as good. The results of the ratings are summarized in Table10.

DESCRIPTION	NUMBER RESPONDING	% RESPONDING
no response	361	28.4%
exceptionally poor	9	0.7%
below average	90	7.1%
average	535	42.1%
above average	250	19.7%
exceptionally good	26	2.0%

TABLE 10

Quality Rating of MECC Disks

Earlier in this report, six categories were established in order to be able to describe schools accurately by instructional level. Three of these categories (elementary school level, junior high school level and senior high school level) will be analyzed in detail to allow inferences to be drawn about the nature and extent of instructional computing at each of the levels.

IV. FINDINGS - ELEMENTARY SCHOOLS

A. Microcomputers in Elementary Schools

A total of 564 of the schools participating in this survey were categorized as elementary schools (ECS to sixth grade). The total number of microcomputers reported by these schools was 3,306. Respondents in this category indicated that they were planning to purchase an additional 1,725 microcomputers during the next fiscal year. Table 11 shows a complete breakdown of the number of microcomputers in elementary schools as well as the number of microcomputers planned for next year by brand category.

BRAND CATEGORY	NUMBER REPORTED	NUMBER PLANNED (NEXT FISCAL YEAR)
APPLE type	2,860 (86.5%)	1,614 (93.6%)
MAC type	13 (0.4%)	16 (0.9%)
COMMODORE type	135 (4.1%)	27 (1.6%)
VIC 20 type	71 (2.1%)	7 (0.4%)
IBM type	38 (1.1%)	28 (1.6%)
RADIO SHACK type	35 (1.1%)	1 (0.1%)
OTHER BRANDS	154 (4.7%)	32 (1.8%)
TOTAL	**3,306(100%)**	**1,725(100%)**

TABLE 11

Number of Microcomputers in Alberta
Elementary Schools

APPLE type microcomputers have dominated the elementary market and all indications are that they will continue to dominate the elementary market during the next fiscal year. With 140,211 students enroled in the 564 elementary schools surveyed, the number of students per microcomputer at the elementary school level is 42.4. If elementary schools are successful in acquiring additional microcomputers, as indicated by this survey, the total number of microcomputers in elementary schools will rise to 5,031 and the ratio of students to microcomputers will decrease to 27.9.

A total of 21 of the 564 elementary schools (3.7%) surveyed reported having no microcomputers. The total number of students attending these 21 schools was 2,562 which means that approximately 1.8% of the students attending elementary schools in Alberta attend a school in which there are no microcomputers.

The next section of the survey sought to determine where microcomputers in elementary schools were typically housed. The results of this portion of the survey are summarized in Table 12.

LOCATION	NUMBER OF SCHOOLS	NUMBER OF MICROCOMPUTERS
MICRO LAB.	127 (22.5%)	883 (26.7%)
RESOURCE ROOM	148 (26.2%)	340 (10.3%)
ADMIN. OFFICE	138 (24.5%)	147 (4.4%)
TEACHERS' CLASSROOM	187 (33.2%)	799 (24.2%)
MOVE AS NEEDED	273 (48.4%)	934 (28.2%)
INDUSTRIAL EDUC. LAB	0 (0.0%)	0 (0.0%)
BUSINESS EDUC.	0 (0.0%)	0 (0.0%)
OTHER LOCATION	44 (7.8%)	154 (4.7%)
UNACCOUNTED FOR		49 (1.5%)
TOTAL		**3,306(100%)**

TABLE 12

Location of Microcomputers in Elementary Schools

The results from the 564 elementary schools surveyed showed that 120 of the schools (21.3%) had teachers who were using some form of computer assisted instruction (CAI). The total number of teachers using CAI in elementary schools was 2,978 (37.4%).

The extent to which schools have made use of MECC disks is summarized in Table 13.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	14	2.5%
none	120	21.3%
1 - 30	384	68.1%
31 - 60	35	6.2%
61 - 90	6	1.1%
91 - 120	2	0.3%
more than 120	3	0.5%
TOTAL	**564**	**100.0%**

TABLE 13

Extent of Use of MECC Disks in Alberta Elementary Schools

Only a very small percentage of Alberta elementary schools (.5%) appear to be assembling a collection of ALL MECC disks. Instead, it seems that most schools (68.1%) seem to have acquired a collection of 30 disks or less. This is what one might expect in view of the fact that many of the MECC disks are designed for use with higher grade levels. However, it was surprising to find that 21.3% of the schools do not have any of the MECC disks.

In some school jurisdictions, resource materials are available from a centralized source within the jurisdiction. This survey also sought to determine the extent to which such centres were being used to loan MECC disks to schools. The results of this part of the survey are summarized in Table 14.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	277	49.1%
none	172	30.5%
1 - 30	34	6.0%
31 - 60	22	3.9%
61 - 90	16	2.9%
91 - 120	12	2.1%
more than 120	31	5.5%
TOTAL	**564**	**100.0%**

TABLE 14

Elementary School Access to MECC Disks Via Resource Centres

Respondents were asked to rate the overall quality of MECC disks. Many respondents indicated that it was difficult to assign an overall rating because some programs were good, while others were not as good. The results of the ratings are summarized in Table 15.

DESCRIPTION	NUMBER RESPONDING	% RESPONDING
no response	143	25.4%
exceptionally poor	1	0.2%
below average	38	6.7%
average	247	43.8%
above average	126	22.3%
exceptionally good	9	1.6%
TOTAL	**564**	**100.0%**

TABLE 15

Quality Rating of MECC Disks as Rated by
Alberta Elementary Schools

B. Elementary Computer Literacy

Of the 564 elementary schools in Alberta, 415 (73.6%) reported that they were offering a course in computer literacy at the elementary level while the remaining 144 (25.5%) indicated that they were not. Of those not offering computer literacy at the elementary level, 53 (37.3%) indicated that they would be doing so during the next term, 62 (43.7%) indicated that they would be doing so within two terms, and 27 (19.0%) indicated that they had no plans for offering computer literacy.

Three major approaches to introducing computer literacy were identified. Two of the approaches are outlined by the provincial curriculum guides and are designated as the *discrete unit* and the *integrated unit*. The third approach involves teaching computer literacy as part of another subject area. A total of 156 elementary schools (31.5%) reported that they were using the integrated approach to computer literacy while 211 (42.5%) reported that they were using the discrete approach. The remaining 129 schools reported that they were teaching it as part of another subject. When asked to specify the subject or subjects in which computer literacy was being introduced, 125 (96.9%) specified mathematics, 19 (14.7%) specified science, 92 (71.3%) specified language arts and 20 (15.5%) specified "other". Respondents were also asked to indicate the level at which computer literacy is first introduced. A number of schools specified several levels, indicating that in those schools it is being introduced at several levels at the same time. In such cases, the lowest level specified was recorded for reporting purposes. Table 16 shows a summary of the levels at which computer literacy is introduced in elementary schools.

GRADE LEVEL	NUMBER OF SCHOOLS
Introduced sporadically	83 (14.7%)
ECS	70 (12.4%)
1	193 (34.2%)
4	137 (24.3%)
5	36 (6.4%)
6	21 (3.7%)
NO RESPONSE	24(4.3%)
TOTAL	**564(100.0%)**

TABLE 16

Grade Levels at which Computer Literacy is First Introduced in Alberta Elementary Schools

Approximately 369 (65.4%) of the elementary school respondents indicated that they were using LOGO, while 155 (27.5%) indicated that they were not.

In responding to the six factors that LIMIT the extent to which schools are able to introduce elementary computer literacy, following is a table of responses:

FACTOR	MOST SIGNIFICANT 1	2	3	4	5	LEAST SIGNIFICANT 6
Availability of Hardware	219 (39%)	87 (15%)	63 (11%)	53 (9%)	54 (10%)	51 (9%)
Availability of Software	96 (17%)	98 (17%)	104 (18%)	88 (16%)	83 (15%)	58 (10%)
Availability of Print Material	19 (3%)	40 (7%)	83 (15%)	135 (24%)	120 (21%)	91 (16%)
Teacher Background	154 (27%)	158 (28%)	109 (19%)	52 (9%)	43 (8%)	24 (4%)
Funding	240 (43%)	122 (22%)	67 (12%)	57 (10%)	26 (5%)	16 (3%)
Timetabling	74 (13%)	75 (13%)	88 (16%)	75 (13%)	104 (18%)	108 (19%)

TABLE 17

Factors Limiting the Introduction of
Elementary Computer Literacy in Alberta Schools

The two most significant factors that limit the extent to which elementary schools are able to introduce computer literacy programs in Alberta schools appear to be *AVAILABILITY OF HARDWARE* and *FUNDING*. It would seem that these two factors are closely related. Another significant factor appears to be *TEACHER BACKGROUND*.

V. FINDINGS - JUNIOR HIGH SCHOOLS

A. Microcomputers in Junior High Schools

A total of 100 of the schools participating in this survey were categorized as junior high schools (seventh grade to ninth grade). The total number of microcomputers reported by these schools was 920. Respondents in this category indicated that they were planning to purchase an additional 615 microcomputers during the next fiscal year. Table 18 shows a complete breakdown of the number of microcomputers in junior high schools as well as the number of microcomputers planned for next year by brand category.

BRAND CATEGORY	NUMBER REPORTED	NUMBER PLANNED (NEXT FISCAL YEAR)
APPLE type	677 (73.6%)	575 (93.5%)
MAC type	1 (0.1%)	2 (0.3%)
COMMODORE type	107 (11.6%)	7 (1.1%)
VIC 20 type	33 (3.6%)	1 (0.2%)
IBM type	15 (1.6%)	13 (2.1%)
RADIO SHACK type	18 (2.0%)	4 (0.7%)
OTHER BRANDS	69 (7.5%)	13 (2.1%)
TOTAL	**920(100%)**	**615(100%)**

TABLE 18

Number of Microcomputers in Alberta
Junior High Schools

As was the case with elementary schools, APPLE type microcomputers also dominate Alberta junior high schools. Furthermore, all indications are that they will continue to dominate the junior high school market during the next fiscal year. With 40,801 students enroled in the 100 junior high schools surveyed, the number of students per microcomputer at the junior high school level is 44.4. If junior high schools are successful in acquiring additional microcomputers as indicated by this survey, the total number of microcomputers in junior high schools will rise to 1,535 and the ratio of students to microcomputers will decrease to 26.6.

Only one of the 100 junior high schools (1.0%) surveyed reported having no microcomputers. The total number of students attending this school was 20 which means that approximately 0.05% of the students attending junior high schools in Alberta attend a school in which there are no microcomputers.

The next section of the survey sought to determine where microcomputers in junior high schools were typically housed. The results of this portion of the survey are summarized in Table 19.

LOCATION	NUMBER OF SCHOOLS	NUMBER OF MICROCOMPUTERS
MICRO LAB.	73 (73.0%)	483 (52.5%)
RESOURCE ROOM	32 (32.0%)	97 (10.6%)
ADMIN. OFFICE	45 (45.0%)	50 (5.4%)
TEACHERS' CLASSROOM	30 (30.0%)	139 (15.1%)
MOVE AS NEEDED	20 (20.0%)	39 (4.2%)
INDUSTRIAL EDUC. LAB	23 (23.0%)	46 (5.0%)
BUSINESS EDUC.	2 (2.0%)	19 (2.1%)
OTHER LOCATION	21 (21.0%)	47 (5.1%)
UNACCOUNTED FOR		0 (0.0%)
TOTAL		**920(100%)**

TABLE 19

Location of Microcomputers in Junior High Schools

The results from the 100 junior high schools surveyed showed that 83 of the schools (83.0%) had teachers who were using some form of computer assisted instruction (CAI). The total number of teachers using CAI in junior high schools was 355 (15.0%).

The extent to which schools have made use of MECC disks is summarized in Table 20.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	3	3.0%
none	23	23.0%
1 - 30	61	61.0%
31 - 60	9	9.0%
61 - 90	3	3.0%
91 - 120	0	0.0%
more than 120	1	1.0%
TOTAL	**100**	**100.0%**

TABLE 20

Extent of Use of MECC Disks in Alberta Junior High Schools

Only a very small percentage of Alberta junior high schools (1%) appear to be assembling a collection of ALL MECC disks. Instead, it seems that most schools (61.0%) seem to have acquired a collection of 30 disks or less. It is not surprising that most junior high schools do not have all of the MECC disks, since many of the disks are intended for use with elementary students and with senior high school students. Perhaps most surprising is the finding that 23.8% of the schools do not have any of the MECC disks.

In some school jurisdictions, resource materials are available from a centralized source within the jurisdiction. This survey also sought to determine the

extent to which such centres were being used to loan MECC disks to schools. The results of this part of the survey are summarized in Table 21.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	52	52.0%
none	29	29.0%
1 - 30	6	6.0%
31 - 60	4	4.0%
61 - 90	0	0.0%
91 - 120	2	2.0%
more than 120	7	7.0%
TOTAL	**100**	**100.0%**

TABLE 21

Junior High School Access to MECC Disks Via Resource Centres

Respondents were asked to rate the overall quality of MECC disks. Many respondents indicated that it was difficult to assign an overall rating because some programs were good, while others were not as good. The results of the ratings are summarized in Table 22.

DESCRIPTION	NUMBER RESPONDING	% RESPONDING
no response	27	27.0%
exceptionally poor	2	2.0%
below average	9	9.0%
average	39	39.0%
above average	20	20.0%
exceptionally good	3	3.0%
TOTAL	**100**	**100.0%**

TABLE 22

Quality Rating of MECC Disks as Rated
by Alberta Junior High Schools

B. Junior High School Computer Literacy

A total of 100 of the schools participating in this survey were categorized as junior high schools (seventh grade to ninth grade). Of these, 82 (82%) reported that they were offering a course in computer literacy at the junior high school level, while 7 (7%) reported that they were not offering computer literacy. The remaining 11 (11%) did not respond to this item.

Respondents were asked to indicate how the computer literacy course was being offered in their school. A total of 68 respondents (68%) indicated that computer literacy in their school was being offered as a *Group A Option* while 20 (20%) respondents indicated that it was being offered as a part of a subject area. While *Group B Option* was not one of the choices on the survey, 7 respondents (7%) wrote in responses indicating that this was how the computer literacy course in their schools was being offered. In responding to this item, several respondents selected more than one option, probably indicating that in those schools computer literacy is offered in more than one way.

Those respondents who indicated that computer literacy in their schools was being offered as part of a subject area were asked to indicate the subject area or areas through which computer literacy was being offered. A total of 14 (70%) specified mathematics, 4 (20%) specified science, 7 (35%) specified language arts and 12 (60%) specified "other".

VI. FINDINGS - SENIOR HIGH SCHOOLS

A. Microcomputers in Senior High Schools

A total of 72 of the schools participating in this survey were categorized as senior high schools (tenth grade to twelfth grade). The total number of microcomputers reported by these schools was 3,217. Respondents in this category indicated that they were planning to purchase an additional 1,839 microcomputers during the next fiscal year. Table 23 shows a complete breakdown of the number of microcomputers in senior high schools as well as the number of microcomputers planned for next year by brand category.

BRAND CATEGORY	NUMBER REPORTED	NUMBER PLANNED (NEXT FISCAL YEAR)
APPLE type	1,573 (48.9%)	607 (33.0%)
MAC type	17 (0.5%)	13 (0.7%)
COMMODORE type	1,041 (32.4%)	139 (7.6%)
VIC 20 type	1 (0.03%)	0 (0.0%)
IBM type	507(15.8%)	909 (49.4%)
RADIO SHACK type	27 (0.8%)	139 (7.6%)
OTHER BRANDS	51 (1.57%)	32 (1.7%)
TOTAL	**3,217 (100.0%)**	**1,839 (100.0%)**

TABLE 23

Number of Microcomputers in Alberta
Senior High Schools

As was the case with elementary and junior high schools, APPLE type microcomputers also dominate Alberta senior high schools followed closely by COMMODORE type microcomputers. However, indications are that both APPLE and COMMODORE type microcomputers will lose that dominant position in the senior high school market during the next fiscal year and that IBM type microcomputers will dominate the high school market. With 63,141 students enroled in the 72 senior high schools surveyed, the number of students per microcomputer at the senior high school level is 19.6. If senior high schools are successful in acquiring additional microcomputers as indicated by this survey, the total number of microcomputers in senior high schools will rise to 5,056 and the ratio of students to microcomputers will decrease to 12.5.

All of the 72 senior high schools surveyed had one or more microcomputers, therefore, none of the students attending a senior high school in Alberta attend a school where there are no microcomputers.

The next section of the survey sought to determine where microcomputers in senior high schools were typically housed. The results of this portion of the survey are summarized in Table 24.

LOCATION	NUMBER OF SCHOOLS	NUMBER OF MICROCOMPUTERS
MICRO LAB.	49 (68.1%)	1,227 (38.2%)
RESOURCE ROOM	29 (40.3%)	90 (2.8%)
ADMIN. OFFICE	38 (52.8%)	73 (2.3%)
TEACHERS' CLASSROOM	40 (55.6%)	179 (5.6%)
MOVE AS NEEDED	27 (37.5%)	48 (1.5%)
INDUSTRIAL EDUC. LAB	19 (26.4%)	97 (3.0%)
BUSINESS EDUC.	47 (65.3%)	1,378 (42.8%)
OTHER LOCATION	30 (41.7%)	101 (3.1%)
UNACCOUNTED FOR		24 (0.7%)
TOTAL		**3,217 (100.0%)**

TABLE 24

Location of Microcomputers in Senior High Schools

The results from the 72 senior high schools surveyed showed that 63 of the schools (87.5%) had teachers who were using some form of computer assisted instruction (CAI). The total number of teachers using CAI in senior high schools was 416 (12.2%).

The extent to which schools have made use of MECC disks is summarized in Table 25.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	5	6.9%
none	20	27.8%
1 - 30	38	52.8%
31 - 60	8	11.1%
61 - 90	0	0.0%
91 - 120	0	0.0%
more than 120	1	1.4%
TOTAL	**72**	**100.0%**

TABLE 25

Extent of Use of MECC Disks in Alberta Senior High Schools

Only a very small percentage of Alberta senior high schools (1.4%) appear to be assembling a collection of ALL MECC disks. Instead, it seems that most schools (52.8%) seem to have acquired a collection of 30 disks or less. Since the collection of MECC disks includes materials for all grade levels, it is not surprising that senior high schools would only have those disks that are appropriate for use at that level. It is surprising that 27.8% of the schools do not have any of the MECC disks.

In some school jurisdictions, resource materials are available from a centralized source within the jurisdiction. This survey also sought to determine the extent to which such centres were being used to loan MECC disks to schools. The results of this part of the survey are summarized in Table 26.

NUMBER OF DISKS	NUMBER RESPONDING	% RESPONDING
no response	34	47.2%
none	24	33.3%
1 - 30	2	2.8%
31 - 60	4	5.6%
61 - 90	2	2.8%
91 - 120	1	1.4%
more than 120	5	6.9%
TOTAL	**72**	**100.0%**

TABLE 26

Senior High School Access to MECC Disks Via Resource Centres

Respondents were asked to rate the overall quality of MECC disks. Many respondents indicated that it was difficult to assign an overall rating because some programs were good, while others were not as good. The results of the ratings are summarized in Table 27.

DESCRIPTION	NUMBER RESPONDING	% RESPONDING
no response	27	37.5%
exceptionally poor	1	1.4%
below average	6	8.3%
average	29	40.3%
above average	8	11.1%
exceptionally good	1	1.4%
TOTAL	**72**	**100.0%**

TABLE 27

Quality Rating of MECC Disks
as Rated by Alberta Senior High Schools

B. Senior High School Computer Literacy

A total of 72 of the schools participating in this survey were categorized as senior high schools (tenth grade to twelfth grade). Of these, 18 (25%) reported that they were offering a course in computer literacy at the senior high school level while 51 (71%) reported that they were offering a course in computer processing. The remaining 3 (4%) indicated that they were introducing computer literacy as part of one of the existing subject areas. Respondents were then asked to specify the subject area or areas in which computer literacy was being introduced.

Mathematics was selected by a total of 11 respondents, even though only 3 had indicated that they were introducing computer literacy through an existing subject area. Science was specified by 3 respondents (100%), language arts was specified by 2 respondents (67%), social studies was specified by 1 respondent (33%), and "other" was specified by 5 respondents.

The next part of the survey sought to determine the adequacy of the presently available *computer courses* for meeting student needs in academic, business and vocational areas. The responses to this part of the survey are summarized in Table 28.

	MEETING STUDENT NEEDS		
TYPE OF PROGRAM	YES	NO	NO RESPONSE
ACADEMIC	38 (53%)	16 (22%)	18 (25%)
BUSINESS	57 (79%)	2 (3%)	13 (18%)
VOCATIONAL	22 (31%)	22 (31%)	28 (38%)

TABLE 28

Adequacy of Presently Available Senior High School Courses
in Computing for Meeting Student Needs

The final item in the survey sought to determine whether there were sufficient *numbers of computers* to meet the demands of students in academic, business and vocational programs. The results of this item are summarized in Table 29.

TYPE OF PROGRAM	MEETING STUDENT NEEDS YES	NO	NO RESPONSE
ACADEMIC	24 (33%)	16 (22%)	32 (45%)
BUSINESS	34 (47%)	2 (3%)	36(50%)
VOCATIONAL	19 (26%)	22 (31%)	31 (43%)

TABLE 29

Adequacy of the Quantity of Microcomputer Hardware for Meeting Student Needs

VII. SUMMARY AND CONCLUSIONS

A total of 1,509 schools were surveyed to determine the installed base of microcomputers in Alberta schools on January 1, 1985. The results, based on 1,271 schools responding, showed that the total number of microcomputers in these Alberta schools was 13,748. Survey results were tabulated by school level and by brand category. Table 30 presents a summary of the distribution which clearly illustrates the dominance of APPLE type microcomputers at the elementary and junior high school levels. This dominance, while still evident at the senior high school level, is somewhat weaker and findings presented in Table 23 suggest that it will continue to weaken during the next fiscal year. This finding has clear implications for the Alberta Education Clearinghouse. It would seem that the Clearinghouse should concentrate its efforts on software/courseware evaluation on products designed for APPLE and IBM.

Alberta continues to be amongst the leaders in terms of the quantity of microcomputers in the schools. The average ratio in Alberta schools is 27.8 students per microcomputer and while this ratio is far lower than most other provinces in Canada, it is still considerably higher than that recommended in *Computers in Schools, The Report of the Minister's Task Force on Computers in Education*. That report suggested that there should be a minimum of one "...learning station for every eight students in a school". Looking at the projection for microcomputer purchases for the next fiscal year, it would seem that Alberta schools are likely within three years of achieving the recommended ratio.

BRAND CATEGORY	SCHOOL LEVEL ELEM.	JR. HIGH	SR. HIGH	OTHER	TOTAL
APPLE type	**2,860** (86.5%)	**677** (73.6%)	**1,573** (48.9%)	**4,779** (75.8%)	**9,889** (72.0%)
MAC type	**13** (0.4%)	**1** (0.1%)	**17** (0.5%)	**16** (0.3%)	**47** (0.3%)
COMMODORE type	**135** (4.1%)	**107** (11.6%)	**1,041** (32.4%)	**696** (11.0%)	**1,979** (14.4%)
VIC 20 type	**71** (2.1%)	**33** (3.6%)	**1** (0.03%)	**187** (3.0%)	**292** (2.1%)
IBM type	**38** (1.1%)	**15** (1.6%)	**507** (15.8%)	**309** (4.9%)	**869** (6.3%)
RADIO SHACK type	**35** (1.2%)	**18** (1.1%)	**27** (2.0%)	**90** (0.8%)	**170** (1.4%)
OTHER types	**154** (4.7%)	**69** (7.5%)	**51** (1.6%)	**228** (3.6%)	**502** (3.7%
TOTAL	**3,306** (24.0%)	**920** (6.7%)	**3217** (23.4%)	**6,305** (45.9%)	**13,748** (100%)
SCHOOLS SURVEYED	564 (44.4%)	100 (7.9%)	72 (5.6%)	535 (42.1%)	1271 (100%)
NUMBER OF STUDENTS	140,211 (36.6%)	40,801 (10.6%)	63,141 (16.5%)	138,999 (36.3%)	383,152 (100%)
STUDENTS/COMPUTER	42.4	44.4	19.6	22.1	27.9
NUMBER OF TEACHERS	7,973 (35.7%)	2,367 (10.6%)	3,414 (15.3%)	8,560 (38.4%)	22,314 (100%)
TEACHERS/COMPUTER	2.41	2.57	1.06	1.36	1.62
COMPUTERS/SCHOOL	5.86	9.20	44.68	11.79	10.82

TABLE 30

Microcomputers in Alberta Schools
Summary - January 1985

During the past four years, courses in computer literacy have been a priority in Alberta. While not all schools are teaching courses in computer literacy, nearly three quarters of the elementary schools now offer courses in computer literacy. Furthermore, within two years, more than 95% of Alberta elementary schools will be offering courses in computer literacy. Those schools that do not have any plans to do so tend to be small one-room schools which do not yet have any plans to acquire any microcomputers.

The computer literacy program is equally strong at the junior high school level with just over 82% of Alberta junior high schools now offering courses in computer literacy. However, at the senior high school level, only 25% of the schools offer computer literacy courses. Instead, courses in computer processing seem to be more popular at the senior high school level, with 50% of the high schools offering courses in computer processing. Perhaps, as a result of changing needs, computer literacy at the senior high school level no longer serves the unique need it was designed to serve several years ago. It would seem timely to re-examine the role of computer literacy at the senior high school level.

Software and/or courseware continue to be of concern to educators using microcomputers for instruction. Initiatives taken by Alberta Education to establish the Clearinghouse and to negotiate provincial software/courseware licenses (e.g., MECC) were vital, since without software teachers can make little or no use of microcomputers. While it is clear from the results of this study that teachers have mixed opinions about MECC programs, more than three quarters of the schools in Alberta have acquired MECC programs under provincial license, with most schools having approximately 30 MECC disks in the school. Most schools consider these programs to be "average"; however, it seems that they are serving an important

function and that the provincial government is justified in continuing its support of the provincial license for MECC software/courseware.

One of the biggest obstacles to the implementation of instructional computing is the lack of teachers who are computer literate. More than three-quarters of the elementary schools in Alberta indicated that "teacher background" was a factor which significantly limited the extent to which the school was able to introduce computer literacy. The problem needs to be approached on two fronts. First, steps must be taken to insure that computer literacy is a required course in all pre-service teacher education programs. Second, greater efforts must be made to provide teachers (particularly those living away from major centres) with opportunities to become computer literate. It seems clear that teachers would be willing to participate in telecourses such as the ACCESS Academy for Microcomputers in order to become computer literate.

As we began this decade, our major concern relative to instructional computing involved the acquisition of a sufficient number of microcomputers to enable students to gain a worthwhile experience. The results of this study seem to suggest that we have probably overcome that concern now. However, it would seem that as we move into the last half of this decade, we will be facing two new concerns; the development of excellent instructional software and the development of courses and programs for the adequate preparation of teachers. Clearly, the initiatives that the provincial government has taken in assisting schools to establish a thrust in instructional computing has had a positive result. But further initiatives are needed in the last half of this decade to insure that schools realize full benefits from the investment they have made.

APPENDIX A

FACULTY OF EDUCATION
DEPARTMENT OF INDUSTRIAL AND VOCATIONAL EDUCATION
TELEPHONE (403) 432-3678

THE UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA, CANADA
T6G 0Y1

February 12, 1985

Dear Principal:

Re: Microcomputers in Alberta Schools

For the past several years now, I have conducted periodic surveys of Alberta schools to determine the extent to which microcomputers were being used in the schools. This information has been very valuable to many groups including Alberta Education on whose behalf the surveys were conducted.

While the number of microcomputers in Alberta schools has been growing sharply in the past, we are most anxious to update our data. We are therefore enclosing a survey form concerning the number and type of microcomputers you have in your school.

This year's survey is somewhat different. It lists the information about your school which we gathered the last time we conducted the survey. Even though the number of pages that make up the survey is greater, we hope that you will find the survey easier to complete since you will only need to update any information that has changed since the last time the survey was conducted.

Please note that we would like you to respond to questions concerning the number of microcomputers you have effective January 1, 1985. However, information on page 1 of the survey concerning enrolments should be answered effective September 30, 1984.

When you have completed the survey, please place it in the enclosed self-addressed, stamped envelope and return it. Should you have any questions about any part of the survey, please do not hesitate to call Dr. Milt Petruk at 432-5363.

Thank you for your time and cooperation in completing this survey. I am confident that the information provided by the survey will be most valuable in helping us plan programs which will assist you in meeting the challenge of instructional computing in your school.

Sincerely,

Dr. M.W. Petruk,
Professor

MWP/sc
Encl.

INSTRUCTIONS

1. THE INFORMATION CONTAINED IN THIS SURVEY IS BASED ON THE LAST SURVEY THAT WAS COMPLETED FOR YOUR SCHOOL.

2. READ EACH ITEM CAREFULLY. IF THE INFORMATION THAT APPEARS ON THE FORM IS CORRECT, PLACE A CHECK MARK BESIDE IT. IF THE INFORMATION IS NOT CORRECT, WRITE IN THE CORRECT INFORMATION IN THE SPACE PROVIDED.

3. IF YOU HAVE ANY DIFFICULTY RESPONDING TO ANY OF THE ITEMS IN THE SURVEY, PLEASE CALL :

DR. M. W. PETRUK AT

432-5363

4. THE INFORMATION WHICH WILL RESULT FROM IS SURVEY WILL BE OF GREAT VALUE IN FORMULATING FUTURE PLANS RELATIVE TO INSTRUCTIONAL COMPUTING. YOUR ASSISTANCE IS GREATLY APPRECIATED.

Alberta
EDUCATION

Devonian Building, West Tower, 11160 Jasper Avenue, Edmonton, Alberta, Canada T5K 0L2

February 1, 1985

Dear Principal:

Enclosed in this package you will be receiving a survey form to help us determine the extent to which microcomputers are being used in Alberta Schools.

The survey is once again being conducted by M. W. Petruk from the University of Alberta on our behalf and we are sure that the information that it provides will prove very valuable in our future planning.

Please help us by completing the survey and returning it to Dr. Petruk as soon as possible.

Sincerely,

Mel Fenske

Dr. Mel Fenske
Assistant Deputy Minister

Note: M. W. Petruk's address is: Room 642, Education South
Department of Industrial and
Vocational Education
University of Alberta
Edmonton, Alberta
T6G 2G5

Phone: 432-5363

School Information

USE FIGURES AS REPORTED ON SEPTEMBER 30, 1984

School Code: 655 School name: Elves Memorial Center

Jurisdiction code: 9740 Location: Edmonton

School Population

	AS REPORTED ON 1983 SURVEY	AS REPORTED ON SEPT. 30/84
Approximate Number of students: (NOT INCLUDING ECS CHILDREN)	80	_____(please enter)
Approximate Number of certificated staff (EXCLUDING ECS)	35	_____(please enter)

Grades Taught

lowest grade : ECS _____(correct if necessary)

highest grade: 12 _____(correct if necessary)

MICROCOMPUTER INVENTORY - EFFECTIVE JANUARY 1, 1985

Manufacturer's Name or type of microcomputer	No. of Micros Reported in 1983	No. of Micros Effective Jan. 1/85	Number Planned for next fiscal
APPLE II family, incl. Franklin, Circle or other compatible.....	0	_____	_____
APPLE LISA or MACINTOSH FAMILY.....	0	_____	_____
COMMODORE family incl. 4040, 8032, Superpet, 64....	0	_____	_____
COMMODORE VIC 20.....	0	_____	_____
IBM family incl. PC, XT, PCjr. Eagle, or other compatible.....	0	_____	_____
RADIO SHACK type, model 1, models 3, 4, 100, etc.....	0	_____	_____
OTHER brands, Atari, TI, Sinclair, Acorn, Icon, etc..	0	_____	_____
TOTAL NUMBER OF MICROS.....	0		

Distribution of Microcomputers

Location of Microcomputers	No. of Micros Reported in 1983	No. of Micros Effective Jan. 1/85
Room designated exclusively as a Microcomputer lab.....	0	_____
Resource room or library including library management.....	0	_____
School Administration office.....	0	_____
Contained in a room designated as a teacher's classroom.....	0	_____
Transported from room to room as needed.....	0	_____
Industrial Arts Lab as part of IA program.....	0	_____
Business education lab or classroom as part of Bus Ed.....	0	_____
Other area (specify below)		
_____.....	0	_____
TOTAL NUMBER OF MICROS.....	0	

Use of Computers for Computer Assisted Instruction (CAI)

	Approx. No. of teachers in 1983	Approx. No. of teachers Jan 1/85
Teachers using computers for instruction in a course - CAI/CMI....	0	-----

Administrative Usage of Microcomputers

Type of Administrative Use	as reported in 1983	effective Jan. 1/85
None.....	YES	_____
Recording Attendance.....	NO	_____
Recording Student Grades.....	NO	_____
Printing Student Report Cards...	NO	_____
Scheduling Classes.....	NO	_____
School Financial Records	NO	_____
Word Processing.....	NO	_____
Electronic messaging.....	NO	_____
Other Administrative uses.....	NO	_____

Specify:_____

Staff In-Service

The number of Teachers on the staff at this school who have written computer programs for microcomputers which are being used for instruction or administration is..... NONE _____change if necessary

How many teachers in your school participated in the television microcomputer in-service (ACCESS ACADEMY FOR MICROCOMPUTERS ....._____

How many teachers in your school would participate in a similar television-based in-service if it was offered again WITH University credit (an estimate is sufficient)....._____

How many teachers in your school would participate in a similar television-based in-service if it was offered again WITHOUT University credit (an estimate is sufficient)....._____

MECC Courseware

Two years ago, Alberta Education negotiated the purchase of a license to a quantity of microcomputer disks produced by the Minnesota Educational Computing Consortium (MECC). Since that time, these materials have been distributed to Alberta schools by ACCESS ALBERTA.

What is the total number of MECC disks (not disk titles) that your school currently has in its posession.....

_____none
_____1 to 30
_____31 to 60
_____61 to 90
_____91 to 120
_____more than 120

If your school can borrow MECC products through a district resource centre (or its equivalent) for use in your classrooms (NOT JUST FOR PREVIEWING), please indicate the name of that agency....._____
(omit if not applicable)

How many MECC titles are available on a loan basis from the above agency?.....

_____not applicable
_____1 to 30
_____31 to 60
_____61 to 90
_____91 to 120
_____more than 120

Please rate the overall quality of the MECC disks that have been used at your school. In doing so, focus only on quality. DO NOT CONSIDER PRICE.....

_____exceptionally poor
_____below average
_____average
_____above average
_____exceptionally good

Instructional Usage of Microcomputers

ELEMENTARY LEVEL

Is computer literacy offered as a regular part of instruction/programming for a segment of the ELEMENTARY student population?(check one).....___YES ___NO

IF NO:....

Does the school plan to introduce computer literacy instruction at the ELEMENTARY level.....___IN THE NEXT SCHOOL TERM

___WITHIN THE NEXT TWO YEARS OR MORE

___NO PLANS AT ALL

IF YES:.....

In what manner is computer literacy instruction primarily delivered?.....___AS AN INTEGRATED INTERDISCIPLINARY APPROACH

___AS A DISCRETE SUBJECT

___THROUGH A SUBJECT AREA

IF THROUGH A SUBJECT AREA, WHICH ONE?...___Math
___Science
___Lang. Arts
___Other

Is LOGO used in any manner for computer instruction at the ELEMENTARY level?.....___YES ___NO

At what ELEMENTARY grade level is computer literacy formally introduced in your school? (check one).....___ introduced sporadically

___ grades 1 to 3

___ grade 4

___ grade 5

___ grade 6

Which of the following SIX factors do you feel significantly limit the extent to which you are able to introduce ELEMENTARY computer literacy in your school? INDICATE THE SIGNIFICANCE OF EACH FACTOR BY CIRCLING A NUMBER BETWEEN 1 AND 6.

	MOST SIGNIFICANT					LEAST SIGNIFICANT
AVAILABILITY OF HARDWARE.....	1	2	3	4	5	6
AVAILABILITY OF SOFTWARE.....	1	2	3	4	5	6
AVAILABILITY OF PRINT RESOURCES.	1	2	3	4	5	6
TEACHER BACKGROUND.....	1	2	3	4	5	6
FUNDING.....	1	2	3	4	5	6
TIMETABLING.....	1	2	3	4	5	6

JUNIOR HIGH SCHOOL

Is computer literacy offered as a regular part of instruction/programming for a segment of the JUNIOR HIGH student population?(check one).....___YES ___NO

IF YES:.....

In what manner is JUNIOR HIGH computer literacy instruction PRIMARILY delivered? ___AS AN A-OPTION

___THROUGH A SUBJECT AREA

IF THROUGH A SUBJECT AREA, WHICH ONE?...___Math
___Science
___Lang. Arts
___Other

SENIOR HIGH SCHOOL

In what manner is SENIOR HIGH computer literacy instruction PRIMARILY delivered?.....___ THROUGH COMPUTER LITERACY 10

___ THROUGH COMPUTER PROCESSING 10-20-30

___ THROUGH INTEGRATION IN OTHER SUBJECTS

if so, which?...___Math
___Science
___Lang. Arts
___Social Studies
___Other

Are the present provincially authorized computer courses available to SENIOR HIGH student adequate to meet....

ACADEMIC STUDENT NEEDS.....___YES ___NO

BUSINESS EDUCATION NEEDS...___YES ___NO

VOCATIONAL EDUCATION NEEDS ___YES ___NO

Are there sufficient numbers of computers available to meet the demands/needs of students in:

ACADEMIC PROGRAMS.....___YES ___NO

BUSINESS PROGRAMS.....___YES ___NO

VOCATIONAL & OTHER PROGRAMS ___YES ___NO

Thank you for your cooperation. Please place this form in the enclosed self-addressed envelope and mail.

61 Dr. Milt Petruk, 432-5363

APPENDIX B

LIST OF PARTICIPATING SCHOOL JURISDICTIONS

JURISDICTION CODE	JURISDICTION NAME	NUMBER OF SCHOOLS RESPONDING	NUMBER OF SCHOOLS NOT RESPONDING
1010	Berry Creek SD	2	0
1020	Cardston SD	14	4
1030	Medicine Hat SD	8	2
1040	Taber SD	10	3
1050	Acadia SD	7	1
1060	Rangeland SD	6	0
1070	Peace River SD	12	1
1080	Yellowhead SD	16	2
1090	Rocky Mountain SD	10	0
1100	Neutral Hills SD	3	1
1110	Sturgeon SD	10	1
1120	Willow Creek SD	15	1
1130	Pincher Creek SD	6	1
1140	Starland SD	3	4
1150	Wainwright SD	6	1
1160	Provost SD	5	3
1170	Westlock SD	10	1
1180	Foothills SD	16	3
1190	Rockyview SD	23	3
1210	Spirit River SD	8	1
1220	High Prairie SD	13	1
1230	Fairview SD	7	1
1240	Lac La Biche SD	4	3
1250	Fort Vermilion SD	9	5
1260	East Smokey SD	6	1
1270	Three Hills SD	7	3
1280	Northland SD	18	8
1290	Drumheller Valley SD	3	0
1300	Crowsnest Pass SD	3	0
1310	Mount Rundle SD	2	1
2010	Cty of Grande Prairie	12	3
2020	Cty of Vulcan	5	7
2030	Cty of Ponoka	9	2
2040	Cty of Newell	10	3
2050	Cty of Warner	12	5
2060	Cty of Stettler	8	3
2070	Cty of Thorhild	4	0
2080	Cty of Forty Mile	6	6

JURISDICTION		NUMBER OF SCHOOLS	
CODE	NAME	RESPONDING	NOT RESPONDING
2090	Cty of Beaver	7	1
2100	Cty of Wetaskiwin	12	0
2110	Cty of Barrhead	6	1
2120	Cty of Athabasca	7	0
2130	Cty of Smoky Lake	2	3
2140	Cty of Lacombe	12	1
2150	Cty of Wheatland	12	3
2160	Cty of Mountain View	8	3
2170	Cty of Paintearth	6	1
2180	Cty of St. Paul	6	1
2190	Cty of Strathcona	28	2
2200	Cty of Two Hills	5	1
2210	Cty of Camrose	9	2
2220	Cty of Red Deer	14	0
2230	Cty of Vermilion River	10	1
2240	Cty of Leduc	19	3
2250	Cty of Lethbridge	12	6
2260	Cty of Minburn	7	3
2270	Cty of Lac Ste Anne	10	0
2280	Cty of Flagstaff	8	3
2290	Cty of Lamont	5	1
2300	Cty of Parkland	24	2
3010	St. Albert SD	5	2
3020	Edmonton SD	159	27
3030	Calgary SD	173	34
3040	Lethbridge SD	16	0
3050	Medicine Hat SD	16	1
3060	Banff SD	2	0
3070	Red Deer SD	21	1
3100	Wetaskiwin SD	6	0
3110	Stirling SD	1	0
3130	Camrose SD	5	1
3140	Stettler SD	3	0
3150	Exshaw SD	1	0
3160	Legal SD	1	0
3200	Brooks SD	6	0
3220	St. Paul SD	2	0
3230	Redcliff SD	2	1
3240	Grande Prairie SD	8	0
3255	Whitecourt SD	3	0

JURISDICTION		NUMBER OF SCHOOLS	
CODE	NAME	RESPONDING	NOT RESPONDING
3260	Fort McMurray SD	12	0
3280	Jasper SD	2	0
3320	Waterton Parks SD	0	1
3340	Grovedale SD	0	1
3350	Devon SD	3	0
3360	Ralston DND District	1	0
3370	Canadian Forces Base SD	4	0
3380	Mynarsky Park SD	1	0
3390	Medley SD	4	0
3430	Swan Hills SD	1	0
3450	Grande Cache SD	3	0
3460	Lakeland SD	10	2
4010	Calgary RCSSD	59	6
4020	Edmonton RCSSD	73	10
4030	Lethbridge RCSSD	7	0
4040	Wetaskiwin RCSSD	2	0
4050	Vegreville RCSSD	1	1
4060	Red Deer RCSSD	7	0
4070	Pincher Creek RCSSD	0	1
4080	Medicine Hat RCSSD	7	1
4090	Theresetta RCSSD	1	0
4100	Drumheller RCSSD	1	0
4105	Lakeland RCSSD	5	0
4110	Fort Vermilion RCSSD	0	1
4130	Grande Prairie RCSSD	6	0
4135	Stony Plain RCSSD	1	0
4140	McLennan RCSSD	1	0
4150	Wainwright RCSSD	1	0
4155	Edson RCSSD	1	0
4160	Fort McMurray RCSSD	7	1
4170	Fairview RCSSD	1	0
4175	Hinton RCSSD	1	0
4180	Spirit River RCSSD	1	0
4190	Manning RCSSD	1	0
4210	Peace River RCSSD	0	2
4240	Killam RCSSD	0	1
4250	Assumption RCSSD	1	0
4260	Sexsmith RCSSD	0	1
4270	Taber RCSSD	1	1
4280	High Prairie RCSSD	0	1

JURISDICTION		NUMBER OF SCHOOLS	
CODE	NAME	RESPONDING	NOT RESPONDING
4320	Camrose RCSSD	2	0
4370	Provost RCSSD	1	0
4390	Beaverlodge RCSSD	1	0
4420	Coaldale RCSSD	1	0
4480	Picture Butte RCSSD	1	0
4500	Bow Island RCSSD	0	1
4520	Valleyview RCSSD	1	0
4550	Grimshaw RCSSD	1	0
4570	Whitecourt RCSSD	2	0
4580	Ponoka RCSSD	1	0
4590	Nampa RCSSD	0	1
4600	Vermilion RCSSD	1	0
4670	Fort Saskatchewan RCSSD	3	0
4680	Sherwood Park RCSSD	6	1
4720	Westlock RCSSD	1	0
4730	Drayton Valley RCSSD	1	0
4900	Spruce Grove RCSSD	2	0
4930	Rocky Mountain RCSSD	0	1
4940	Leduc RCSSD	2	0
5010	Barons Consolidated SD	1	1
5030	Falher Consolidated SD	1	0
6010	Thibault Consolidated SD	3	0
7010	Glen Avon PSSD	1	0
7020	St. Albert PSSD	9	3
8010	St. Paul Regional SD	1	0